ABSTRACT OF THE DISCLOSURE

A new method is presented for generating a probability map, a cutoff map, and a confidence limit map in one single operation. In addition, the new method can also generate a cube representing a cubic volume of earth formation by using the same method for generating the aforementioned maps. This is accomplished by:

(a) gridding a cross section, (b) Kriging the gridded cross section thereby producing a plurality of expected values and a corresponding plurality of standard deviations associated, respectively, with the plurality of intersections on the gridded cross section, (c) generating a plurality of probability density functions which correspond, respectively, to the plurality of expected values/standard deviations of the plurality of intersections, (d) integrating each of the probability density functions thereby generating a plurality of cumulative distribution functions which correspond, respectively, to the plurality of probability density functions, (e) choosing a value from each of the cumulative distribution functions associated with each of the intersections of the gridded cross section, and (f) assigning such value to its associated intersection of the gridded cross section and assigning a unique color to each such value, thereby generating a map illustrating the characteristics of the cross section through the earth formation. Since a cube includes a plurality of gridded cross sections, by generating a map for each cross section, the new method will generate the cube.